

**CRASPEDOLEPTA EAS (MCATEE) AND TRIALEURODES PHLOGIS RUSSELL
(HEMIPTERA: STERNORRHYNCHA: PSYLLIDAE AND ALEYRODIDAE):
NEW DISTRIBUTIONAL AND HOST-PLANT RECORDS OF TWO
LITTLE-KNOWN PHLOX SPECIALISTS**

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Abstract.—The psyllid *Craspedolepta eas* (McAtee) and the whitefly *Trialeurodes phlogis* Russell are seldom-collected, univoltine specialists on *Phlox* species (Polemoniaceae), especially moss phlox, *P. subulata* L., in shale barrens. *Craspedolepta eas* is reported for the first time from Maryland, North Carolina, and South Carolina, with additional records given for Virginia and West Virginia. *Phlox nivalis* Lodd. is a new host of *C. eas*. The whitefly *T. phlogis*, previously known only from the type locality in Virginia, is newly recorded from Maryland, Pennsylvania, South Carolina, and West Virginia, with additional records given for Virginia. *Phlox nivalis* also is a new host of this aleyrodid.

Key Words: Insecta, monophagy, distribution, shale barrens

Moss phlox (*Phlox subulata* L.; Polemoniaceae) is a mat-forming, somewhat woody (suffruticose) perennial that harbors a diverse insect fauna, especially in mid-Appalachian shale barrens and outcrops. Its fauna includes two recently described species (Henry 1979, Russell 1993) and several undescribed species, as well as specialist herbivores whose association with phlox became known only with recent attention to this plant (Wheeler 1994; 1995a,b). Herein, I provide new distributional and host-plant data for two little-known sternorrhynchans that are phlox specialists.

Craspedolepta eas (McAtee)

This psyllid was described from Maryland in the vicinity of Plummers Island and from Great Falls (McAtee 1918). No additional records were available, nor were host relationships known, until Wheeler (1994)

reported it from *Phlox* species in Illinois, Missouri, Pennsylvania, Virginia, and West Virginia. *Craspedolepta eas* develops on the narrow-leaved *P. subulata* in shale barrens and on broader-leaved phloxes, *P. divaricata* L. and *P. stolonifera* Sims, of more erect growth habit in moist woods. Nymphs of this univoltine psyllid overwinter at the base of their hosts and in spring resume feeding on stems near ground level. Adults begin to appear in early to mid-April and are present until mid- to late May. Infested hosts are most readily detected by looking for the psyllid's white, waxy secretions and honeydew in the crowns of moss phlox, or on basal stems in the case of more erect, herbaceous species of *Phlox* (Wheeler 1994).

The numbers in parentheses below refer to adults.

Records.—MARYLAND: Allegany Co., High Germany shale barren E. of Little Or-

leans, 6 May 1994 (1); Oldtown shale barren, 6 May 1994 (2). Washington Co., Boy Scout shale barren, Sideling Hill Wildlife Management Area, 6 & 15 May 1994 (>10). NORTH CAROLINA: Granville Co., Rt. 15, 0.6 km S. of Bullock, 29 Apr. 1997 (4). SOUTH CAROLINA: York Co., Blackjacks Heritage Preserve, S. of Rock Hill, 20 Apr. 1997 (3). VIRGINIA: Mecklenburg Co., Rt. 15 at State Line Rd., 1.3 km N. of North Carolina state line, 29 Apr. 1997 (5); Rockingham Co., Forest Service Rd. 87, George Washington National Forest, W. of Fulks Run, 18 May 1994 (1); Shenandoah Co., Edinburg Gap, 4 km E. of Edinburg, 30 Apr. 1994 (3). WEST VIRGINIA: Pendleton Co., SE. of Upper Tract, 24 Apr. 1994 (1).

Remarks.—Most of the new records of *C. eas* are from the Valley and Ridge Physiographic Province except those from North Carolina, South Carolina, and Mecklenburg County, Virginia, which extend the known distribution to the Piedmont. The host plant in the Piedmont was the narrow-leaved *P. nivalis* Lodd., a new host record for this psyllid. For all other new distributional records, the host was *P. subulata*.

Trialeurodes phlogis Russell

This whitefly was described from the Short Mountain shale barren near Mount Jackson, Va., on the basis of pupae I collected on *P. subulata* in mid-April 1991 and 1992 (Russell 1993). *Trialeurodes phlogis* has remained known only from the type locality.

Taxonomy of the Aleyrodidae is based on pupae; adults, therefore, cannot be identified with certainty. In the case of *T. phlogis*, the adults I collected from mat-forming phloxes are almost certainly those of this species. My initial observation of adults on *P. subulata* at Shanks, W. Va., in late April led Louise Russell to suspect that the whitefly involved might be an uncommon species; an early-season emergence of adults is atypical in the genus *Trialeurodes* (L.M. Russell, personal communication). *Trialeu-*

rodes phlogis is the only aleyrodid known from wild phloxes, Britton's (1902) record of the greenhouse whitefly, *T. vaporariorum* (Westwood), from *Phlox* likely pertaining to plants in a greenhouse or garden (Russell 1993). Moreover, adults collected from phloxes of prostrate growth habits are gray, with dark markings on the forewings, matching the appearance of those I reared from pupae on foliage of *P. subulata* at the type locality of *T. phlogis*.

The numbers in parentheses below refer to adults unless otherwise noted.

Records.—MARYLAND: Allegany Co., High Germany shale barren, E. of Little Orleans, 6 May 1994 (1). PENNSYLVANIA: Chester Co., Unionville serpentine barrens, NE. of Unionville, 14 May 1994 (1). SOUTH CAROLINA: Pickens Co., nr. Todds Creek S. of Six Mile, 11 Apr. 1998 (2); York Co., Rt. 77 N. of junc. Rt. 901, S. of Rock Hill, 18 Apr. 1992 (1). VIRGINIA: Alleghany Co., Rt. 18, 17 km S. of Covington, 6 May 1990 (1); Bath Co., Rt. 678, Fort Lewis shale barren nr. Cowpasture River, 30 Apr. (2) & 20 May 1994 (3); Mecklenburg Co., Rt. 15 at State Line Rd., 1.3 km N. of North Carolina state line, 29 Apr. 1997 (1). WEST VIRGINIA: Greenbrier Co., Kates Mountain, S. of White Sulphur Springs, 6 May 1990 (2), 12 May 1991 (1 pupal case), 1 May 1994 (2); Whites Draft Rd., E. of Alvon, 1 May 1994 (3); Hampshire Co., Rt. 220, S. of Purgitsville, 14 May 1989 (2); Rt. 50, Shanks, 29 Apr. (>20) & 14 May 1989 (>10).

Remarks.—The host plant from which adults were collected was *P. subulata* except in Mecklenburg County, Virginia, and in South Carolina, where *P. nivalis* was the host. This plant is a new host record for *T. phlogis*.

Trialeurodes phlogis is a characteristic, though obscure, insect of mid-Appalachian shale barrens and shale outcrops. I also found it on *P. subulata* in a Pennsylvania serpentine barren. *Phlox nivalis* was a host in the Piedmont of Virginia and South Carolina. The pupae are difficult to find on the

upper or lower surfaces of the needlelike leaves of *P. nivalis* or *P. subulata*. Adults can be collected by shaking mats of host phloxes over a pan or tray. Unlike the psyllid *C. eas*, which occurs on phloxes of prostrate and erect growth habits, *T. phlogis* has been found only on mat-forming phloxes.

On the basis of my observations at the type locality in Virginia, *T. phlogis* is a univoltine whitefly. It overwinters as a third-stage larva (and possibly also as a pupa), with the adults emerging during the latter half of April. Adults are present until mid-to late May.

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